

### **REMARKS**

Reconsideration and allowance of this application are respectfully requested based on the following analysis.

#### **1. Overview of Non-Final Office Action**

After the instant Amendment, claims 1-9, 11, 12 and 16-19 are all the claims pending in the application.

Claims 13-15 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-9 and 16 are rejected under 35 U.S.C. § 101 because the claimed invention is alleged to be directed to non-statutory subject matter.

Claims 1-9 and 16 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Afrashteh et al. (US 5,426,641; hereinafter “Afrashteh”) in view of Hirvilampi (US 6,351,189).

Claims 11-15 and 17 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Afrashteh in view of Hirvilampi and Domino et al. (US 6,259,752; hereafter “Domino”).

#### **2. Claim Rejection under 35 U.S.C. § 112**

Applicant cancels claims 13-15.

#### **3. Claim Rejection under 35 U.S.C. § 101**

In this Amendment, Applicant amends **claim 1** to more clearly define the statutory subject matter claimed therein.

Claim 1 indicates that operational elements of the method claim are tied to particular machines. Specifically, the operations of “detecting a deviation” and “detecting occurrence of the null power time slots” are closely tied to a shunt and a controlling unit of a power amplifier. Thus, Applicant respectfully submits that the claimed method satisfies one prong of the machine-transformation test established by *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008).

Applicant also submits that claim 1 satisfies the other prong of the machine-transformation test that requires transforming a physical article into a different state or thing.

The claim recites that the “bias of a gate of the transistor” is adjusted according to the deviation detected between a set operation point and an actual operation point of the transistor. It is known in the art, the bias of a gate corresponds to a voltage of an electric signal measured at the gate of a transistor. Thus, adjustment of the bias of a gate of a transistor involves transformation of a signal or data which has been found to fall within the categories of patentable subject matter by the court in the *In re Bilski* case.

Therefore, Applicant respectfully submits that claim 1 satisfies the machine-transformation test of the *In re Bilski*, and thus, the § 101 rejection of claims 1-8 and 16 in this respect should be withdrawn.

With regard to **claim 9**, Applicant also submits the computer-related claim should be determined as statutory subject matter.

Claim 9 indicates that the method for controlling an operating point of a transistor according to the present invention is preferably carried out by a computer program, and this computer program is recorded on a tangible computer readable medium.

It is well settled that computer programs are “functional descriptive material” which imparts functionality when employed as a computer component. Further, when functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. On the other hand, when nonfunctional descriptive material (e.g., music, abstract ideas, literary works, etc.) is recorded on some computer-readable medium, in a computer or on an electromagnetic carrier signal, it is not statutory since no requisite functionality is present to satisfy the practical application requirement. See MPEP § 2106.01.

That being said, the claimed computer readable recording medium has recorded thereon a program for executing a method having requisite functionality which is clearly distinguished from the nonfunctional descriptive material.

Thus, Applicant respectfully submits that claim 9 is directed to statutory subject matter.

#### **4. Prior Art Rejection of Claims**

In this Amendment, Applicant further amends **claims 1 and 11** to further distinguish the method and apparatus claimed therein, respectively.

The claims are now further characterized in that “each of the detecting the deviation, the detecting the occurrence, and the adjusting the bias is performed at a different null power time slot of the TDM(A)-signal.” Support for this amendment can be found at page 2 (last paragraph), page 6 (last paragraph) and original claim 1.

Afrashteh does not teach or suggest this aspect of the claim. In Afrashteh (Fig. 3), the operations “measure drain, compare and adjust gate voltage” occur only during one null power

time slot, which only makes the corresponding amplifier complicated. It should be noted that the instant invention is provided to address this problem of Afrashteh as described in the Background of the Invention (pages 1-3 of the specification).

Hirvilampi may be alleged to disclose that the bias adjustment is performed when an amplifier is not transmitting a signal. However, this reference does not necessarily teach or suggest if the bias adjustment includes all the claimed operations; if the bias adjustment is performed only one time slot during the non-transmitting period; if any one operation of the bias adjustment (if including the claimed operations) is performed outside the non-transmitting period, etc. That is, the disclosure of this reference is not sufficient to disclose or suggest that each of the claimed three operations is performed at a different null power time slot.

Thus, Applicant respectfully submits that claims 1 and 11 would not have been obvious over the cited references.

**Claims 2-6** should be allowable at least due to their dependencies.

**Claim 7** is amended by rewriting this claim in independent form by incorporating existing claim 1.

With regard to claim 7, the Examiner merely cites Fig. 3 of Afrashteh which only shows that each adjustment does not start immediately after each transmit burst, and asserts that this showing teaches or suggests that controlling the operating point of the transistor is started<sup>1</sup> after the transistor has reached a steady state with respect to a temperature surrounding the transistor after a switch-on of the power amplifier. However, the time between the end of a transmission burst and the start of an alleged null power time slot is no more than the Examiner's

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<sup>1</sup> The language "done" in claim 7 is changed to "started" to be consistent with claim 8.

approximation, but is not sufficient to disclose or suggest the claimed feature that specifically indicates the time when controlling an operating point of a transistor begins.

Further, Fig. 3 of Afrashteh is more insufficient to disclose or suggest that the claimed operations recited in claim 1 start after three null power time slots have occurred (claim 8).

Thus, Applicant respectfully submits that claim 7 as amended and claim 8 would not have been obvious over the cited references.

**Claims 9 and 12** should be allowable at least due to their dependencies.

**Claims 16 and 17** are amended by rewriting these claims in independent form by incorporating existing claims 1 and 11.

With regard to these claims, the Examiner simply alleges that the claimed feature is disclosed by Hirvilampi because col. 4 lines 25-30 suggests that a null power time slot can occur before a data time slot and another null power time slot occurs after the data time slot.

However, the Examiner ignores that the claim clearly indicates that the three operations of “the detecting the deviation, the detecting the occurrence, and the adjusting the bias” can be performed during different non-transmitting periods. In other words, the claim should not simply read such that null power time slots exist at each side of a data time slot as the Examiner interprets. Instead, the claim should read such that one entire operation of controlling an operating point of a transistor comprising three operations may be performed at least two separate time slots across a data time slot existing between the at least two separate time slots.

This aspect of the claims is not taught or suggested in Hirvilampi which only discloses that bias adjustment is performed when the amplifier is not transmitting a signal.

Thus, Applicant respectfully submits that claims 16 and 17 as amended would not have been obvious over the references.

**5. New Claims**

Applicant adds new claims 18-19 corresponding to claims 7-8 as amended to more fully cover the present application. Entrance and allowance of the new claims are respectfully requested.

**6. Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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